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ADDRESS DELIVERED BY PROF.
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A. M., M. D.

Senior Surgeon of the Medico-Chirurgical
Hospital.

AT THE SEMI-CENTENNIAL CELEBRA-
TION OF THE DISCOVERY OF
ANAESTHESIA, HELD AT AS-
SOCIATION HALL, PHILA-
DELPHIA, DECEMBER
11, 1894.

I am to assure this great audience that I stand in its presence overwhelmed by the contrast which separates subject and speaker, and that I find words in deference only to the circumstances of the occasion that brings us together.

It is no profane comparison to suggest that naught but a sense of profanation could associate with a priest who should add words to the lifting of the Host. Does not a priest in the performance of this act set a seal upon his lips? Does he not wrap in vestment which has been blessed the hands that are to touch the sacred symbol? The profundity of the meaning, not to say the holiness, of what seems to me to be among the greatest of God's gifts to man, anesthesia, affect me in its contemplation, as I assume the priest to be affected as he approaches the Host. The full feeling is—be still.

Silence! and its golden meaning!

Surely—forcing ourselves to talking and listening—the gold of anesthesia is silence. Silence in place of agonizing, heartrending screams. Silence in place of cries from the lips of pitying, but helpless, bystanders. Silence in presence of torture shorn of its terror.

On an occasion, now many years back, I was wandering through the lanes and alleys of Sleepy Hollow Cemetery, in the town of Concord, Mass., when being led up a hill, I stepped over a low, much

abused hedge of arbor vitæ, discovering a plain, low-set stone, having upon its face a single word. When at the foot of the hill, I had found myself surrounded by what would not inaptly bear description as splendid mausolia.

Upon these marbles were deeply cut many names and the records of many virtues. Neither names nor virtues had, however, significance to me. No chord was struck, no response elicited.

The word upon the low-set stone of the hill top was Hawthorne.

The ring of a bell is its metal. The name of a man is his work. Men who have done something, either as cause or instrument. What reverberations ring out as such names are encountered! Somewhere, everywhere is a sound.

Horace Wells! The name does not, nor will not, still. It rings and rings and rings in distinctness, albeit accordant and discordant sounds are everywhere around it.

The task of reviewing the history of anesthesia was given to the worthy colleague who has preceded me. I am glad of it. Standing, as I feel myself to-day, overshadowed by names and memories—memories of blighted lives, of mental wreckage, of discouragements ending in suicides—what but admiration of the sacrifices made, what but desire to do homage, what else than these should or could fill a human heart on such an occasion! Here Cæsar can be praised, and Rome, too.

A new good is an old gift. Not new in ages past, only because channel was lacking. Electricity before chaos. An Edison, the production of a 19th century. Euphrates, Tigris—both water Mesopotamia. Both, alike, are the Persian Gulf. Not Armenia is the source. A common underpring is the well constituting the Divine afflatus.

My perceptions view Horace Wells as Euphrates and Tigris are viewed;

he and these, and all phenomena, not as things in themselves, but as things in other things.

Whether or not this man was a meditative philosopher to be found oftenest in haunts apart from men, or whether or not he was simply a vessel capable of holding, but never trying to fill itself, I am alike without knowledge as without desire to know. He was filled, however. The river of Lethe found in him a channel. Everywhere over the land flows the stream Nepenthe.

To change a metaphor. Is invention aught but filling a form? Is this not a matter made plain by Plato two thousand years back? Are not forms eternal? forms of things seen yesterday, to-day and to be seen forever. Forms not yet seen. Is invention else than seeing a form and bringing it down from the sky to the uses of men? Materializing it, properly speaking. How as I grow old do I grow impressed with this: The maker of forms, the all, the filler of forms, simple instrument.

It is not even slight departure from the immediate subject of the occasion to make further reference to this matter of forms, for it is not otherwise, according to my conception, that Horace Wells is to be either understood, appreciated, or called the discoverer of anaesthesia.

Was it truthfully, Priestly to whom nitrous oxide owes its discovery? It assuredly was not to Horace Wells. Was or was not anything known of this gas before the day of our own Declaration of Independence? Or is it rather to be put thus: nitrous oxide was phenomenon deductively exposing itself to the chemist out of the droppings of camels upon desert lands: Ammon and ammonia go back to Lybia.

No one has been, or is, greater than Plato. What the dung-burners did, or what Priestly has done, is not credited by him as science, but simply as dealings had with phenomena. "Science," he says, "fritters itself, where its aim is otherwise than knowledge of noumenon. Things unlike are not necessarily dissimilar. The things that lie within things are multitudinous. Who knows, even yet what nitrous oxide is? Who knows even what water is? In a word, who knows what or how much anything is? Nobody.

But the scientist is the evolutionist.

Possessing himself of means, he analyzes. Analysis is one, or closely one, with deduction. Science has no thought, or word, or action, outside of matter.

But forms, the true object of science, as affirmed by Plato, constitute the invisible. The music of a musician is not his notes, the poet's inspirations are not grammar. Reality, or at least nearer approach to reality, is back of these. Notes are to be seen by anybody having eyes, and words are to be heard by anybody having ears. But what as to forms, or ghosts, as those are back of notes and words? What are the seers of these? No forms being back of notes and words, there are no notes and words in front of forms. Was not the ghost of anaesthesia with the camel droppings? Was it not with the dudaim, the devil's apple, of the Arab? Has it not been with alcohol since men distilled and knew this agent. Is it not with the poppy through all the ages that fields have been made red by this plant?

In 1540 the oleum vitreoli dulce was first given to the uses of men by Valerius Cordus. He had not the name-ether for it, but his oil was of near approach to the ether of Frobersius, and the ether of to-day. Guthrie, Liebig and Soubeiran simultaneously discovered chloroform in 1831. Did Cordus, in 1540, see, or tell anything about a ghost of anaesthesia, as this lay in his sweet oil of vitrol? With chloroform filling the bottles of druggists in 1831, was anybody to be found who had been introduced through its use to the wonderland of Euthanasia.

Let here the idea be repeated of nobody knowing what anything is. Cadmus, beyond all men of his times, saw letters. A Shakespeare, beyond all men of his times, say use lying with letters. How many are the expressions lying with letters not yet seen by anybody? Forecast the unwritten poetry!

Here is culmination; and here is the place of Horace Wells in history.

Horace Wells saw in a room at Hartford what had never before been seen by mortal man. He saw anaesthesia. It was ages before he was born that ether was materialized, and it was before he was born that nitrous oxide was formulated, and it was when he was in no way thinking about such things that chloroform was brought forth. The seer saw anaesthesia. The sight lay.

as I understand, with a hurt hand of which no complaint was made. Others, many others, saw the blooded hand. In a distant state, about the same time, I myself saw the hurt hand, but none, not one of the many others saw anaesthesia. I think it is not to be denied that some saw a filmy halo that meant anaesthesia. There was a something but what the something was they did not make out. What was seen was seen only to be forgotten. Truly, Sir Humphrey Davy is to be credited with a sight and feeling of the elysium. Ego was differentiated for him by nitrous oxide from environment; but, while he felt and saw, it was separability that was felt and seen, not anaesthesia. His expression on coming from under the influence of nitrous oxide is familiar, "Nothing exists but thought."

Anaesthesia, the thing being truly understood, is barrier between matter which does not feel, and Ego, which is percipient. It is not matter that sees, hears, feels, touches or tastes. Does the matter temporarily composing the cadaver of a dissecting room see, hear, feel, touch or taste? Percipient is away from it; there is neither seeing, hearing, feeling, touching nor tasting by a cadaver; a flute, separated from its player, is wood, having no song in it.

I am not to credit Horace Wells with sight of separability. The "Me and the not Me," is not likely to have been seen even by his external eye. His seership lay with a direction that people delight to call practical. Of many things, hundreds, thousands, perhaps, lying with nitrous oxide he saw one. But what a one! Here begins his glory. Here is to continue his glory. Here, so long as pain is esteemed hurtful and absence of it pleasurable, will the name of Horace Wells be upon the lips of men.

Parallels recall obligations and glory due others. Apples have fallen since first apples began to grow and ripen. Kettles, in which water was being boiled for the evening repast, have opened their iron lips and tried for numberless centuries to say what they had to tell about locomotion. Over the earth and across the face of the heavens electricity has sought vainly until lately for a seer. The sun with his rays full of perfect pictures, brought as free gifts to men, could find no taker.

In the year 1665 a seer sitting under a tree at Woolsthorpe found himself

able to hear fairly well what a falling apple had to tell about the moon staying where it belongs. Heron, of Alexandria, holding his egotistic ear to the spout of a kettle, heard a story of steam and wrote it down in the shape of his æolipile. Peipin saw the cylinder. Fulton saw a steamboat; Stephenson was, perhaps, the first witness of a train of cars drawn by a locomotive; Thales of Miletus got a story of electricity from a piece of amber. Daguerre, not, however, until the age of the world A. D. 1839, was able to take what the sun had to give of pictures; Mozart, beginning with the use of common sense, and from this passing to the advantages lying with educated sense, dropped at the last both these and put down in form of notes what alone the flowers whispered to him, having found out that education is not always the best teller of things that are to be heard.

Not necessarily to detain. Was anaesthesia, as anaesthesia, known to surgery before 1844 as it became known in that year and since remains known? Not nitrous oxide, not ether, not chloroform, not rapid breathing, but anaesthesia.

Who was the man of that year? Horace Wells.

Does this not settle the question?

Let, however, all deserved honor and glory associate with names of workers and experimentalists as these have enlarged application of the inspiration of the Hartford seer: Ether, chloroform, what would surgery do without them?

How could the world do without them? How did the world do without them?

It is not necessary in this presence to enlarge beyond a sentence on the benefits of anaesthesia to humanity. Are not all here assembled doing and experiencing, each after the manner of his work, what I did and experienced only yesterday. Upon the operating table of a hospital lay sleeping, sweetly and gently as ever baby slept, a member of our fraternity. In place of the ordinary neck was a tumor that reached from chin to sternum and from ear to ear. Wherever, as it proved, reaching fingers could reach, prolongations of this mass extended themselves. Salivary glands, trachea, carotid arteries, jugular veins, pneumogastric nerves, all were more or less embraced and wrapped about, yet while so horrible a dissection as was required to remove the mass went on,

sleeping and dreaming quietly continued, nor was any consciousness had by our brother of his terrible experience until an hour later he awakened snugly tucked away in one of the most comfortable of beds, the tender hand of a godly nurse wiping away the cold sweat-drops standing threateningly upon his forehead.

Consider, in contrast, a picture familiar before the day of Wells' inspiration! A mother, her heart welling out in tears, limbs trembling so as scarcely to afford her support, helpless misery characterizing her countenance, despair striking at her with its thongs of flame, follows into a hospital operating amputheatre a nurse who carries her first-born, which is being brought to the table. Alas! helpless, indeed, is the mother. How more than gladly, how a thousand times more than gladly, would she lay down in place of the child! Cries of mother and child moan through the hospital, and the least sensitive feels his cheek pale. The crucial moment has come: the child is placed and held by force upon the table. The mother is torn away. For a single moment eyes of mother and child have met in parting. A loud, frightened, despairing cry from the child rings from ceiling to floor of the room. The mother drops in a heap and is carried out a raving lunatic: she raves about and curses God as being without pity or mercy.

Let a concluding picture, having relation with the first, help cover the intermediate one—an intermediate one which extended, alas! from the days of the first surgical performance to the year of grace 1844.

A mother brings to a hospital a child whose deformity requires the knife for its correction. Conscious of the power of anaesthesia, the surgeon talks to the parent, while all the while the little patient, pleased and enveigled by the sweet smell of chloroform, is itself anaesthetizing itself. The cutting is done. The child had a dream of roses and gardens and wide fields. The mother has placed in her arms her restored offspring. She has no tears, no words; her contact has been alone with beneficence. She is overwhelmed by the mystery she has met and passed. She says "Our Father which art in Heaven." She says and feels, "there is a God of pity and mercy."

Look at the name of the maker of

these pictures of the new time; it reads Horace Wells.

To what extent anaesthesia has cultivated sensibility, I leave every surgeon to judge. Who, if suddenly transplanted into the olden times, being possessed of his present knowledge of anaesthetics, could handle a knife without cutting everywhere else than where it would be desirable to cut; otherwise dying shortly out of sympathy for his patients? Could he say, "Merciful Father which art in Heaven" in place of thinking "Pitiless devil who is in hell? Alas! how near to hopeless atheism may ignorance bring a man. Hail! that knowledge shows God and Father everywhere. Hail to all poets, to the music hearers, to the seers of forms of every kind! Let statues be stood for them in the squares. Let tablets of enduring brass mark their working places. Let us place, and hold them, with the immortals.

Hail to him who has proven to be, perhaps, the greatest of the seers, Horace Wells.

TOXICS.

BY WILLIAM F. BARCLAY, M. D.
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A poison is a substance which, when taken into the system, and either being absorbed or by its thermal action on the parts with which it is in contact, produces deleterious effects.

It may seem strange that almost all toxics are innocent until they reach the circulation of the blood. Their slow or rapid absorption largely determines their deleterious effects upon the system. In our observations we are reminded from time to time of the idiosyncrasies of individuals, and we seldom inquire into the causes of these peculiar conditions. It is generally attributed to a perversion of the nervous system, but in truth is caused by rapid absorption of the poison, and is modified by the power of resistance inherent in the individual.

Hereditary predisposition and peculiar cachexias in persons are dissimilar conditions and are in no sense identical. Heredity has not been defined satisfactorily, but the conditions of progenitors are transmitted in an attenuated form which underlies their maladies.

When disease is ingrafted into the organism it destroys the equilibrium of

the entire physical life, and there is a want of co-ordination and harmony that is essential to perfect development and health. The continued multiplication of these distorted and diseased germs can in no way be more advantageously studied than by the observance of the results that follow. The non-observance of this law enfeebles and annihilates entire families and races.

As to cachexia it is a law of nature throughout the animal and vegetable kingdoms that the multiplication of likes tends to weaken organic life, and on the other hand that the aggregation of dissimilars strengthens the protoplasmic results of differential unions. The non-observance of this truth produces results to which we apply the word cachexia. In its application to animal life it is so well understood and applied in the union of sexes that the consequent results are most advantageous.

The same principles are applicable to man in his protoplasmic development, and if properly studied and understood are of the most benign character as to perfect physical development. The vulgar opinion prevails that hereditary diseases are innate, and that they lie dormant for a time, and then as it were explode and destroy their victims. This doctrine is as false, as a general rule, as it is ridiculous, as simply a predisposition is transmitted.

Were it true, all such weaklings would die in infancy. It would be infinitely better for all such to die in babyhood than to live and suffer from inherited disease. The great desideratum for the educated and enlightened part of the human race is to consider this truth and put it into practical use, so far as the health, intellect, strength and well-being are concerned, in the multiplication of the race. It is not difficult for the acute and careful observer to indicate the affiliations that will in a general way insure the best results.

Divine as well as human laws condemn consanguineous marriages on account of their painful results.

This great truth has been taught by the most careful, aggressive and learned physicians and surgeons down through the decades that have passed that syphilis and scrofula were identical.

The views of the immortal Doctor Samuel D. Gross have been constantly with me in an experience of over 28

years in the practice of medicine, and have been verified in my observations to my entire satisfaction. That the toxic germs of syphilis are transmissible in the various stages of the disease is incontrovertible and undeniable.

It is probable that there is a living germ for all diseases, and as our knowledge increases upon this subject we will be able to prevent and cure many diseases that are now believed to be beyond prevention and remedial influences. When hereditary disease conditions appear and toxic cause are present they find an easy access into the system and suitable influences for their propagation.

The blood is the life of the body, and constitutes about one-fifth of the entire weight, which enables us to understand how deleterious must be the entrance of toxics into the circulation and their effects upon the economy of life.

The germ theory of intoxication is so well established that there are few members of the medical profession who deny or question its correctness. Toxics enter the circulation of the blood and their action on the normal cells produce toxins, and the multiplication of these products bring on pathological conditions.

Nothing is more easily demonstrated than that the emunctories throw off toxics. All excrementitious matter, when reintroduced into the circulation, is poisonous; urine, bile, feces are poisonous, and become more so after exposure to the air.

In disease many things have to be taken into consideration—the individual, age, sex and other conditions, as well as his environments.

We observe at once upon the entrance of a toxic into circulation of the blood that all the functions of the body are disturbed to a greater or less degree, and that definite poisons are quickly formed, such as ptomaines, leucomaines and others, which is nothing more or less than an altered nutrition. The vital forces are at once impaired, or arrested.

Primarily the circulation, and, secondarily, the nervous system, are impressed and a condition termed shock is superinduced. This state is a most interesting study to the pathological student; difficult of comprehension and explanation. It may be remarked that all the vital forces are similarly affected at

the same time. This *vis medicatrix naturae* can at no time be more carefully studied and understood than when the vital forces struggle for an equalization and restoration of the normal conditions.

In the state of shock nature seems intent upon relieving herself of all effete matter by the discharge of the contents of each viscus of the body. All such efforts should be assisted by artificial means in restoring a healthy condition.

Vigorous health and strength are maintained by proper food, perfect digestion with healthful environment. In the germs of organic life, disease takes its beginning by the introduction of toxics; thereby the blood is charged and disease sets up.

Certain predispositions are inherited, and the subject rendered more easily affected by specific toxic influences. That all persons exposed to the same influences are not affected is because of a weakened vital condition, thereby rendering them more easily poisoned. All are impressed by the same specific toxic influences under similar circumstances. Molecular and cell life are great mysteries, of which we know very little. The physiological laws of cell life, when properly considered, it is evident, that the mineral and animal constituents are alike being prepared for the building up of the different tissues that constitute the body.

We begin life by the blending of cells that are healthy or diseased, which determine the ultimate result. Further on we are taught that the blood corpuscles are formed in the spleen and long bones, but I would inquire how they are formed when neither spleen nor bones are present in embryonic development?

In organic growth the circulation is first established, the nervous system follows, and seems to regulate the entire development of the body.

The truth I would establish is that disease begins in the cells, and that all treatment employed must be directed and applied to the circulation of the blood. That while we may differ as to the utility and importance of remedies, we cannot gainsay their benign influences when wisely and judiciously administered to diseased conditions.

That a physician can practice medicine and deny the value of scientific medicine is the surest evidence of that want of

knowledge to prosecute the work of the sacred art of healing.

Toxics are poisons that produce conditions peculiar and distinct in their final results. We are fully aware of many different forms of toxic life, but at a great loss to know by what means they obtain entrance into the body and circulation. We know that food, drink and the air we breathe are vehicles through which the germs reach the circulation. Contact is necessary that most infectious toxic germs may be deposited in various stages of incubation, but are the same in each disease. Toxics may be classified as contagious, infectious, malarial and thermal.

The vitality of disease germs is variable, and in general terms cannot be specified. The germs of many contagious diseases have been known to retain their vitality for long periods of time, and to readily prove toxic under favorable conditions.

Smallpox, phthisis, pulmonalis, scarlet fever, diphtheria, measles and many other diseases may be cited as illustrations of the viability of toxic germs.

It is true that in the organism there is a continual tendency toward toxinia from the normal physiological processes, which is counterbalanced by the excretions of the body. If for a short time you modify or arrest the eliminations by the emunctories of the body, the whole economy of life is disturbed, and pathological conditions set up, and disease established.

Elimination must take place through five excretory offices. A disturbance or disarrangement of one or more destroys the vital equilibrium of life.

The non or partial elimination of the effete products of nutrition and disintegration generates toxics. The vital forces are a constant barrier through their tendency to equalization of the constituents of the protoplasm of the blood against the deleterious effects of toxics.

The abnormal albumins escape by the kidneys, and destroy renal epithelium; thereby inflammatory diseases of these organs are set up. It may be stated that leucin, tyrosin and many other toxic products of the liver are the results of imperfect excretion.

The body in a normal and state pathological is a receptacle and laboratory of toxics.

I am impressed while considering this subject that by the cravings of the

appetite that nature in this way points out that which she in a general way needs for her sustenance.

It has been a rule of practice with me to permit the sick to eat and drink that which the appetite craves. I have as yet to see good reasons for changing this course of practice.

There must be a perverted nutrition in order that infection can take place in man with a single exception, and that disease is syphilis. In order that disease can attack and harm the human body it must first be prepared for it by pathological influences. If it were not for this necessity the human family would have perished from off the earth before this time in the world's history.

Nutrition is life, and all influences that tend to destroy must first impair it. We must study nutrition in all that pertains to it in its equilibrium. Any disproportion in its constituents impairs and unfits it for its normal use. Perverted nutrition leads to the formation of new substances, which become toxic. That much can be done to prevent and cure disease by change of location is well established. Many lives are saved and much suffering averted by a careful and accurate knowledge of climatic influences. Therapy is too general in its tendencies. A few remedies properly prepared and administered give the best general results.

It is to be lamented that venesection is almost forgotten and neglected in the treatment of diseases. We are taught that our civilization has brought about systematic conditions that forbid the use of the lancet. Is it true that we can bring about the same results by our modern therapeutics?

We may enumerate a few therapeutic agents, mineral and vegetable, that aid nature in overcoming the pathological results, superinduced by the introduction of toxics into the circulation of the blood: Gold, arsenic, mercury and iodine, with their compounds, and opium, Peruvian bark, and their alkaloids, with digitalis, aconite and veratrum veridi.

That the practice of medicine is becoming more empirical in the age in which we live is not true, but on the contrary is broad and general in research as to causation and treatment.

Research as to the origin and effects of disease is becoming more general and characteristic. Lesions of the body are

more carefully and scientifically studied each year, as we bring to our aid helps in the investigations now going on in our laboratories that simplify and determine the causes of disease as well as the changes it brings about.

We now definitely know the causes of many of the most fatal maladies and apply prevention and cures that modify their ravages to a large extent and annually save thousands of lives and prevent much suffering.

Contagium vivum of contagious germs is beyond all doubt established. The implantation of vegetable organisms in healthy man and their multiplication in the individual infected, and their transmissibility to others, producing a disease similar to the original, is the final termination of theories on the subject of contagion.

Paraciticism is established in a number of diseases in man; for instance, charbon, glanders, phthisis pulmonalis, gaseous gangrene, blenorrhagia, erysipelas, septicaemias, as well as in animals and fowls, swine fevers, symptomatic pustule and cholera.

Each disease is produced by a microbe, and we must wait for the discoveries yet to be made in microbiological research for those not already discovered. The dissemination of microbes is universal, and that all are not alike affected is not so easily explained.

To a healthy man the microbe is less likely to be dangerous than to one not in good health, as the individual circumstances are less favorable for development. A modification antecedent in nutrition renders infection more probable. Fatigue, exposure to cold and wet, nerve excitation, bad food and air, and many other influences are diseases developing causes. Hygienic causes, such as excesses in eating, drinking and venery, with loss of rest and bad air, develop nutritive disorders in which the cells are perverted and a tainted nutrition set up, and amongst these cells the generative elements of ovule and spermatozoon are formed, and by their union will cause the beginning of a new creature, whose cells must partake of the disorders of its antecedents.

In the entire domain of pathological research we know the least about the toxalbumens. The normal physiological albumen is one of the most important constituents of the blood and as yet our

knowledge of it in health is very limited.

It is accurately known when there is a disproportion of the red and white corpuscles, as well as the normal fibrinization of the vital fluid.

The toxalbumens prevent the formation of the red and white corpuscles.

It may be here observed that in certain pathological conditions there seems to be a third corpuscle, or something that very closely resembles it. In the field of antitoxic treatment there has been in the past fifteen years a large amount of investigation and laborious work in laboratory research, and while we can but deplore the futility of results, so far as toxic treatment has advanced, we must very highly appreciate the advances so far as causation of diseases is concerned. While it is perhaps too early to draw positive conclusions as to this method of treatment, it may be fairly stated that thus far permanent results are disappointing.

Remedies thus far highly beneficial have been obtained from the mineral kingdom, so far as prevention and cure have prevailed. Prevention is better than cure, and each year the profession of medicine is accomplishing more in this direction.

We are enabled by quarantine to circumscribe plague districts, and by cleanliness, and disinfection to prevent the spread of disease. The good accomplished in this way is inestimable, and the number of lives annually saved cannot be conjectured. The pestilences transmitted from foreign countries under our present immigration laws are a constant menace and danger to our people.

I am unable to recall a single instance of the transmission of pestilential disease from our country to foreign countries. The constant vigilance on the part of physicians as to the prevention of the spreading of disease in different ways is not estimated or appreciated by the people. We seldom hear it referred to; but, on the other hand, the profession is frequently unjustly charged with carelessness in carrying diseased germs to their patients.

Great care should be exercised in treating patients suffering from contagious and infectious diseases, lest the germs might be carried in this manner. From these considerations it appears that when the toxic causes are present their ready transmissibility and easy ac-

cess to others under suitable influences for their propagation cannot be overestimated. It is probable that there is a living germ for all diseases, and as our knowledge increases we will be enabled to prevent and cure many diseases that are now believed to be beyond prevention and remedial influences.

The profession of medicine is now tending toward specialism, perhaps not in some branches to its best interests, but it certainly is true that the bacteriologist is entitled to a more prominent place than he has yet attained. The sciences of bacteriology and therapeutics keep pace with each other, and annually thousands of lives are saved and much human suffering averted.

The causation of many diseases is beyond our present comprehension, yet the processes, following primary elementary dystrophies, nerve reaction, disturbances antecedent to nutrition and infection are known.

Diathesis is a permanent disturbance brought about by the blending of germs that provoke and maintain pathological processes. It is generally considered a morbid temperament, dwarfing all the powers of animal life.

In conclusion, the laboratory research and scientific investigation of toxics, as to their propagation in cultures, and their introduction into the bodies of man and animals, for scientific and recorded, are the labor of the bacteriologist. We do not presume the labor of a volume, but rather a short review of the scientific work that has been done in this most interesting field of thought and its application in the practice of medicine at the present time.

QUININE IN THE LOCAL TREATMENT OF ULCERS.

Alfodi has noticed that infectious ulcers, which seem to be rebellious to all kinds of treatment, assume at once a healthy appearance and heal more quickly when bathed with a solution of 1 per cent. of sulphate of quinine than when washed with a solution of corrosive sublimate or dusted with iodoform. Regarding simple ulcers, the healing action of the sulphate of quinine is still more rapid.

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HOSPITAL THERAPEUTICS

If the action of the Board of Charities and Corrections last week in refusing to re-elect Dr. Daland to the staff of the Philadelphia Hospital is any criterion, it seems that a hospital physician has no right to exercise his own discretion in the treatment of free patients, who are for the time being wards of the city. In the matter of treatment, moreover, we find that it is a Board of Laymen who are to be the sole judges whether a given method is the right one to follow. Scientific men and physicians, who have given their whole lives to the study of their profession, are to have no authority in the matter. This is, indeed, a novel, not to say peculiar, order of affairs.

At the recent annual election to the staff of the Philadelphia Hospital the old members were all reinstalled, except that Dr. H. A. Hare was asked to supersede Dr. Daland, only one vote being cast for the latter.

As we understand it, the reason given for this action on the part of the Board of Charities and Correction, was that some time since Dr. Daland gave a few doses of nux vomica in place of quinine in cases of malaria. The reason for this treatment (which in our opinion was justifiable, if this was all) given by Dr. Daland was that he wished to study the condition of the blood in these patients during a chill, researching for the causes of malaria, the evidence of which is believed to be removed by quinine.

A point like this should not be hastily acted upon in an adverse manner by a board of laymen. If any unquestionably bad treatment had been used, the proper method would have been to have such charge presented before a committee composed of the hospital staff, subject to a report to the Board, and subsequent action by the latter.

It is well enough to protect hospital patients from careless experimentation, and, perhaps, it would be better to obtain their full consent to anything of the sort, but we believe that the average hospital inmate cares very little as to the methods used for his recovery, so long as he gets well in a reasonable length of time, and that it is poor policy to curtail the legitimate means for obtaining accurate scientific medical knowledge which can only be accomplished at the bedside.

We sympathize with Dr. Daland for his misfortune in being the butt of adverse criticism by the action of a board of laymen, and trust the time will come when our public medical institutions will be in the hands of men of scientific attainment and due appreciation of the needs of the medical profession, for the forwarding of knowledge looking to the cure of disease.

CHRISTIAN SCIENCE TREATMENT.

Another instance has come to light of death by "faith" (?) cure. A young girl is reported to have died in Malden, Mass., without a doctor, because she or her family had pinned their faith to the Christian science treatment. This sort of thing seems to have a good hold of a certain class. Seldom is it allowed to

be carried quite so far, for the most fervent of the students of the so-called "science" are usually pledged to call in a physician in cases of desperate illness.

We can readily see how a disease, affecting secondarily the heart, could suddenly prove fatal, if the danger were not speedily recognized and treated properly; but it is not obvious how a parent can be so neglectful of full duty to offspring, let alone humanity, as to deny a child the benefit of all human aid in sickness.

A suggestive point was once uttered by a New York divine, bearing on the faith cure, in a sermon, the subject of which was "Faith without works is dead." It was to the effect that the Almighty had power enough to heal the sick, if He chose, but that He also undoubtedly preferred to accomplish the feat through the agency of a well-directed pill.

An agency which tampers with the laws of nature, whether it goes under the name of disease, ignorance or Christian science, is as devoid of divine influence as was Judas' betrayal of the Christ.

If we are to expect divine favor we must go to work to get it, and we may be pretty confident that it will not come without an intimate knowledge of natural and moral laws combined with an adherence thereto.

When we have become sufficiently endowed with the noumenon to be able to control the phenomenon by exercise of the will we may possibly cure disease by true Christian science; but as this could only be accomplished by an intimate knowledge of both phenomenon and noumenon we had better stick to the pill.

THE THERAPY OF PHLEBOTOMY.

Homœopathy took the field, the dogma of infinitesimals was promulgated, to be closely followed by another, as a necessary sequence, viz.: that disease is self-limited, or, in other words, that nature unaided is capable of effecting a cure, provided she is not too much hampered by those who would replace her processes by artificial means.

The teachings of the revered Sydenham, of Broussais and Louis, were cast aside with contempt. Emesis, catharsis and phlebotomy, as resorted to by a late generation of practitioners, the modern

physician knows practically little of, except from a historical standpoint.

Diagnosis has been rather over-cultivated, the secret processes of deranged physiology have been well mastered, but on the side of medical therapeutics, the cure of disease through constitutional remedies, we have lagged far behind.

Too much time has been spent with the student on pathology, and not enough on the clinical side of medicine.

What proportion of our American graduates know how to perform a venesection, to cup and scarify or apply leeches? Probably, none are taught how to do those things in their student course in college; yet, who that has any practical knowledge of the effects of the abstraction of blood, can deny its marvelous potency?

The venerable Verneuil lately declared, in the French Academy of Medicine, that since the lancet and wet-cups have been cast aside in pleurisy, and the Dieulafoy-aspirator had come into use, the mortality has enormously increased; from the early stages of this malady blood-letting, local or general, acts like magic. And, in the premonitory stages of puerperal convulsions, associated with renal congestion, it is by all odds the safest and most reliable remedy.

It has not been the use; but the abuse of blood-letting, which has made it unpopular. Fashion is the curse of medicine. In the near past it was almost criminal to operate, without saturating the healthy nude tissues with powerful irritants. The antiseptic theory was overdone.

Let blood-letting be revived, and employed with judgment and discretion.

STERILIZATION OF CATGUT BY BOILING IN OLIVE OIL.

Eastman (Annals of Surgery) experimented with the sterilization of catgut by means of hot olive oil. The following are his conclusions: Catgut can be rendered sterile by heating in oil to a temperature of 212 deg. F. for three hours. The method is reliable, cheap and rapid. The quality is not impaired, and gut so treated is more satisfactory as to strength and smoothness than if subjected to the ether-alcohol-bichloride process. A higher temperature than 212 deg. F. is not necessary for sterilization and is an injury to the gut. The material should be wound on reels or cylinders and not on anything with sharp edges.

Medicine.

Under the charge of E. W. BING, M. D., Chester, Pa.

MEDICAL COMPLICATIONS OF GONORRHEA.

The knowledge of the infectious character of gonorrhea has drawn attention to the rare complications of this disease, which formerly were passed over, as difficult of pathogenic interpretation.

The gonococcus may infect the organism in two ways—by extension of the local disease, giving rise to the surgical complications, referable to the uterus and its appendages, peritoneum, bladder, etc.; but it gives rise to extended and generalized infection, by way of the lymphatic system, producing a condition somewhat analogous to pyemia; at other times it evolves in an insidious manner, without tendency to formation of pus. From this variety the purely medical affections arise. Among these are nervous affections, skin diseases and endocarditis.

Nervous complications—These have been vaguely mentioned by Home, Grell, Peter, Fournier and others; they may be located in the brain, meninges or peripheral nerves; latent hysteria may be developed as a result of gonorrhea.

Hayun and Parmentier called attention to the special manifestations. According to these authors, the symptoms appear some days or weeks subsequent to the appearance of gonorrhea, or during the course of gonorrheal rheumatism. They consist frequently in motor and sensory disturbances of the lower limbs, but sometimes the whole spinal axis is affected. Ephemeral disorders may be due simply to congestion of the cord. When of greater duration they may be due to meningo-myelitis localized in the inferior portion and posetro-lateral portions of the cord.

Nearly always in spinal complications of an acute character, the meninges are involved. Meningo-myelitis shows itself during the purulent stage, more rarely when the clasp is cured.

Its duration is variable from fifteen days to six months, or even one or two years.

The prognosis, without being grave, is serious. Certain individuals appear more disposed to spinal affections than others. Arthritis in this class of cases is fre-

quent and should be watched, for muscular atrophy often accompanies the arthritic symptoms.

Cerebral meningitis may develop in the course or decline of an attack of gonorrhea, and in this event it coincides with the arthritic phenomena, which led Bounet and Ball to call it rheumatic meningitis.

Peripheral affections of the nerves are not rare. They generally concern the sensory nerves, especially the sciatic. Fournier called attention to sciatic as a complication of gonorrhea.

It generally appears during the second or third week, and is worst at night. A common character is the presence of a painful point at the situation of emergence of the nerve. It is liable to appear with each attack of gonorrhea. Other neuralgias may also show themselves. They are due to infection rather than to the ordinary causes of neuralgia. Painful spasms of the urethra bladder are due to this cause. Skin affections, simulating measles, purpura scarlitina, etc., are met with as a result of gonorrhea. Heart complications—of these endocarditis is most frequent—may appear during a second or third attack of gonorrhea. Those already subject to cardiac affections are peculiarly liable to endocarditis.

The affection presents itself under two forms—it may be simple or infectious, and may result fatally. It is of insidious origin.

Precordial anguish (angina pectoris), palpitations, phrenic pain and irregular fever. These have a short duration generally, but leave behind latent valvular disease, which is easily awakened into activity.

The infectious form usually ends in death. It begins after some weeks of the gonorrheal affections have elapsed by chills, repeated several times a day, followed by phenomena of septic character, as local signs are to be found, cardiac dullness, apex and aortic murmurs, with irregular and frequent pulse. The interior of the heart is the seat of warty vegetations and of ulcers; the muscle itself may show ordinary abscess, fatty degeneration or proliferation of embryonic cells. The arteries are the seat of endarteritis of obliterating tendency. Gonococci have been found in the vegetations.

—La France Medicale.

Electro-Therapeutics.

Under the Charge of S. H. MONELL, M. D., 44 West 46th St., New York.

THE AMERICAN ELECTRO-THERAPEUTIC ASSOCIATION.

REPORT OF FOURTH ANNUAL MEETING, CONTINUED, FIFTH SECTION, SEPTEMBER 27.

The previous section of this report was devoted to Professor Houston's brilliant paper upon electrocution and the extended discussion which it provoked. The next subject upon the programme was "Induction Currents." "General Faradization" was treated by its originator, Dr. A. D. Rockwell. After referring in a comprehensive manner to the value of faradic currents he declared that the most important thing about electricity in medicine was its influence upon nutrition. Hundreds possess neither outfit nor knowledge of using electricity.

Others stated that as much depended upon the method of the application as upon the selection of the current. For instance, a long fine coil, capable of sedation effects, may be so employed as to produce not only stimulation, but irritation when the latter was contraindicated and injurious.

"Diseases of the Nervous System. The Treatment of Neuritis by the Galvanic and Faradic Currents" was next considered by Dr. Gray. He prefaced his remarks by glancing at the difficulties in the way of learning how to use electricity properly. His experience of twenty years represented chiefly a long succession of ideas undone and displaced by newer ones.

It was at first well-nigh impossible to obtain any clinical knowledge on the subject of electro-therapeutics. It was a little better now, but even now two or three in a hundred would be a large estimate of the number of physicians in the United States who actually know how to handle electricity in regard to meter, battery, electrodes, currents and dosage.

He said it had taken him years of experience and many hundreds of cases to find out what he knows now as to the value of galvanic and faradic currents in neuritis.

The same was true of every practi-

tioner who had arrived at any degree of skill in employing this agent. He got little or no help out of books.

The difference in diagnostic ideas as to neuralgia does not exist with a neuritis. Here we have a definite pathological state to deal with. Dr. Gray considered that in the treatment of neuritis both galvanism and faradism were in the acute stages absolutely harmful and not merely useless. Of this he had not the slightest doubt. At what stage of the disease, then, should electricity be applied?

In neuritis of a mixed nerve he would use faradism, but not before the pain was well under control. In the case of a motor nerve he would simply wait for the cessation of inflammation before applying galvanism. In specific cases electricity of any kind has proved to be dangerous and to light up the inflammation. In ordinary cases, however, Dr. Gray's method was as follows:

Two or three weeks after the acute onset of the neuritis he began with very small currents of galvanism— $\frac{1}{2}$ to $1\frac{1}{2}$ mil.—cautiously applied for brief sittings, say for one minute. He claimed that while this treatment was exceedingly beneficial an increase of current to 2 mil., applied for three minutes, would be so injurious as to put the patient in bed. The treatment must be tentative. If $\frac{1}{2}$ a milliampere for one minute, tried for a couple of days, excites no pain and does good, he gradually increases, and only when improvement is advanced does he raise the C. S. to 3 mil. and increase the time to three minutes.

He thought text books in error in regard to electrodes usually recommended. Small electrodes that impinge directly on the nerve are useless, and, moreover, hurt the patient. He preferred a broad electrode, placed above the nerve. This method obtained the best results. He was in the habit of wetting the electrodes and skin with pure warm water, and objected to acidulated solutions, such as he had formerly employed.

Later in the case he used the faradic current.

Dr. Gray then took up the old query

of how much of the effect of electricity was due to suggestion.

Citing cases to illustrate the workings of suggestion when he had forgotten to switch on the current, he declared that he was firmly convinced that we do get a genuine therapeutic effect from electricity. He had seen cases in his clinics of old neuritis, where great atrophy of muscles was present, a case in which, after years of observation, it was evident that a spontaneous cure would not take place.

Again and again he had seen these cases light up and go on to recovery and strength under galvanism and faradism, and he was convinced that there is a therapeutic value in electricity, not equaled by any other agent we possess. It is all-important, however, that a proper instrument should in all cases be made use of.

The ordinary sponge electrodes which constitute the outfit of 99 out of 100 batteries are absolutely worthless. Absorbent cotton is a much better conductor, and makes a better covering for electrodes. He referred to the wide-spread prevalence of defective meters, rheostats and inferior batteries among physicians, and declared that good results depend upon details of treatment and the perfection of the apparatus. He paid no attention to polarity.

Taking up this part of the subject where Dr. Gray left it, Dr. Massy stated that the neurological literature of electro-therapeutics was well-nigh absolutely worthless. Many neurologists failed utterly to appreciate the value of this agent, and he attributed this largely to the literature in their hands. For many years they were almost the only members of the medical profession who were supposed to possess skill in electrical treatment, but little advance was made until gynecologists entered the field and developed its possibilities.

Apostoli had done more for the progress of the science than all the eminent neurologists of the century.

The chief feature of Dr. Gray's method being the brief application of small currents, Dr. Herdman rose and remarked that he had proved that mild galvanism was capable of doing wonders in chronic nutritive disorders. He described a case of six years' duration affecting the lower extremities, in which amputation of the foot was urged by a competent surgeon. This case was cured in three months by

1-10 mil. of galvanic current applied regularly.

Dr. Herdman said that while Dr. Gray dismissed the matter of polarity with disdain, he had himself always regarded it closely, and he would suggest that in those cases where Dr. Gray had felt obliged to delay treatment till the inflammation had subsided, he could not only begin at once but materially hasten resolution if he would select the proper pole, as all skilled electricians now did, and should always do.

At this point the discussion was taken up by Dr. Morton, who agreed with Dr. Gray that mild currents would do in neuritis what strong currents would not. He was afraid of strong currents on human tissues. He, however, disagreed with the great neurologist on the matter of polarity, which he regards as a subject of great importance. He did not see how any one could, at this stage of electrical science, question that there was a great difference in the action and effects of the two galvanic poles.

It is well known that healthy nerve and muscle tissues are slightly alkaline in reaction, while fatigued and degenerated tissues are acid. In electrolysis acids are liberated at the positive pole and alkalies at the negative pole. Electrical action is naturally greatest when the reaction of the tissues and the pole applied are the same. An acid pole would act freest on acid tissues and vice versa, and this seemed to the speaker to explain the famous "reaction of degeneration" formulated by Erb.

Returning to the treatment of neuritis the speaker would not favor the use of currents which, as Dr. Gray stated, could not be used for several weeks till the acute condition had subsided, and which were liable to do harm unless most carefully employed. He advocated rather the application of thick, long, static sparks along the length of the nerve and over sensitive points. In this manner he had treated hundreds of cases, and had never failed to cure a case of sciatica that had come to his clinic. He had applied similar sparks to cases of multiple neuritis. A marked benefit usually followed the first application and the benefit progressed with each treatment till it finally became permanent. Most cases were cured in a month or less.

He spoke from a large experience, and was positive that the long, thick static

spark did no harm to the most sensitive neuritis, and not only did no harm, but did a great amount of good and produced a cure in the shortest time.

Dr. Kellogg next spoke favorably of the sinusoidal current as a pain reliever and also of the high frequency current derived from the static machine by means of a transformer.

Consideration of the subject was then closed by Dr. Gray, who stated that he had never tried the long static spark, hence could not speak of it from experience. He considered the explanation of the reaction of degeneration as rather fanciful, but was willing to act upon Dr. Herdman's suggestion about trying the sedative pole in early stages of neuritis.

Mr. A. E. Kennelly next delivered his lecture upon the "Physics of the Sinusoidal Current," which he illustrated by diagrams of all forms of interrupted current waves.

The representation of induced current travels has been a subject of considerable interest, and was at one time offered as a method of comparing values of currents and determining dosage. As these markings by the graphic method can only be obtained under certain conditions, and as sufficient volume of current is required to act upon the pencil, the method is so far available chiefly for coarse coil and slowly interrupted currents, and has really no practical value, other than that of a laboratory curiosity.

It will not produce satisfactory readings of the high tension, fine coil, rapidly interrupted currents now obtained from the best faradic apparatus, and which are almost exclusively used by gynecologists.

The final session of the convention was opened in the afternoon, September 27, by a paper upon the "Physics of the Static Induced Current" by Professor Edwin Houston, of Philadelphia. It was a current of relatively high frequency, high potential and small amperage. The term "frequency" was synonymous with the number of to-and-fro movements executed per second.

Recently a transformer has been constructed by a French manufacturer, which greatly increases the frequency of the alterations and produces for medical purposes a current which is essentially the same as Tesla's.

S. H. MONELL.

(To be continued.)

AN ERROR CORRECTED.

Owing to an unfortunate printer's error in our December 8 issue, reporting Prof. Houston's paper upon "Electrocution," the resolution referring to the autopsy question is attributed to Dr. Newman. As the preceding paragraph plainly shows, Dr. Newman disagreed with that side of the argument.

The motion to delay the autopsy was offered by Dr. Nunn, of Savannah, and would have been so stated but for the error.

Miscellany.

GROWING PAINS.

Growing pains, defined as pains in the limbs caused by and during rapid growth, and sometimes so severe as to give rise to growing fever, have been diagnosed by the author less and less frequently as the years rolled by until the vanishing point was reached. Cases which have been classed together under this name are the following:

Myalgia from Fatigue.—This is the commonest variety, usually about the knees and ankles after unusual exertion. They are probably due to auto-infection brought about by excessive production of effete materials in the blood and their inefficient elimination. Elevating the limbs and rubbing with the palm of the hand in a direction toward the heart, relieving venous stasis and facilitating a supply of healthy blood to the exhausted muscles, promptly relieves the pain.

Rheumatism.—This is second, if not first in frequency. There is a slight pain in the joints, little or no swelling and very mild fever, and hence the true cause is not recognized; but rheumatic endocarditis frequently develops in these cases.

Diseases of Joints and Bones of the Lower Extremities.—Cases of hip-joint disease and suppurative epiphysitis of the upper end of the fibula, diagnosed by the laity and allowed to go on untreated, are related under this heading.

Fevers, accompanied by pains in the limbs, in one instance proving to be inception of typhoid fever, constitute this class.

Adenitis.—Here, again, the mother still supposes that the lad of sixteen years suffered from "growing pains," but he

was treated for gonorrhea and a sympathetic bubo.

The malady "growing pains," with its frequent concomitant growing fever, like its congener disorders of dentition, as a separate morbid entity exists principally as an article of faith. The complaint still maintains, however, a strong hold on the lay mind, and forms an extremely common lay diagnosis which is often the cause of much suffering, and even death, by leading to the neglect of curative measures at a time when they are most effective.—P. B. Bennie in Arch. Pediatrics.

BEQUESTS TO MEDICAL INSTITUTIONS OF PHILADELPHIA.

By the will of the late Dr. William Goodell, of Philadelphia, the sum of \$50,000 is donated to the Medical Department of the University of Pennsylvania. The College of Physicians will from the same source fall heir to \$10,000. Dr. Goodell was the eldest son of a veteran missionary to Turkey, and himself practiced medicine for several years at Constantinople.

THE USE OF FORMALIN IN DERMATOLOGY.

At a recent meeting of the Parisian Society for Dermatology and Syphilography M. Potterin reported upon the treatment of skin parasites with formic aldehyde. He considered that Formalin belongs to the safest and most reliable antiseptics, for its vapors diffuse readily even through masses of fatty matter. This property makes it specially suitable for the treatment of deeply implanted sick hair, and also for the disinfection of the hair follicles filled with sebaceous matter. The application of a layer of absorbent cotton dipped in a 2 per cent. Formalin solution, and covered over with an oil-skin bandage, is well tolerated. In case of irritation of the skin, the bandage may be removed for a day.

GONORRHEA IN WOMEN.

Carry has made extensive researches amongst prostitutes and fallen women of other classes suffering from vaginal discharge. In only one-third of the number was the gonococcus of Neisser detected. Carry insists that the gonococcus is absolutely specific of gonorrhea. It is very easy to recognize, being quite different in form from any other microbe. In four out of five cases its seat was found to be the urethra, one in five the cervix. The periurethral follicles, the vulvo-vaginal (Cowper's) glands, the

vagina, and anus are exceptional seats of the gonococcus. Gonorrheal urethritis in women is the most exclusive source of gonorrhea in man, and the absence of discharge, pain and local tenderness all tend to hide the source of contagion.

—Lyon Medical.

VERY MUCH AFFLICTED.

He had fits of epistaxis
And the weakest of thoraxes
Ever since he had the measles and the mumps;
He was mad for weeks with rables
And had seven years of scabies
And dyspepsia kept him always in the dumps.

Weak eyes had he from Iritis,
Back, likewise, from meningitis,
And the latter scarcely left him any spine;
All the tumors from fibroma
To the deadliest sarcoma
He had grown as thick as hops upon a vine.

Chronic case he had of ptosis;
Symptoms of tuberculosis,
And the action of his heart was out of rhythm;
He had numerous neuroses,
Inanition and chlorosis,
And from birth he'd ne'er been free from rheumatism.

He had falling of the hair, too,
All, in short, that flesh is heir to,
Every ailment in the calendar had he;
He had every kind of pain,
Toothache, bunions and migraine—
Hold—I'm wrong, he never had the housemaid's knee.

—Exchange..

BOOKS AND PAMPHLETS RECEIVED.

COELIOTOMY FOR BILATERAL PYOSALPINX, FOLLOWED FOUR DAYS LATER BY APPENDICITIS—OPERATION—RECOVERY. By Frederick Holme Wiggin, M. D. Reprinted from the New York Medical Journal for February 10 and April 7, 1894.

A CASE OF CHRONIC PERITONITIS, WITH INTESTINAL AND ABDOMINAL FISTULAE—ENTERORRHEA—RECOVERY. By Frederick Holme Wiggin, M. D. Reprinted from the Medical Record, August 11, 1894.

CHAIRMAN'S ADDRESS—SECTION OF OBSTETRICS, A. M. A. By Joseph Eastman, M. D., LL. D. Reprinted from the Journal of the American Medical Association, August 4, 1894.

IMMEDIATE CATARACTOMY FOLLOWING THE REMOVAL OF CATARACT. By L. Webster Fox, M. D. Reprinted from the Medical Bulletin.

HYGIENE OF THE EYE. By L. Webster Fox, M. D. Reprinted from the Dietetic and Hygienic Gazette, November, 1894.

EVASCERATION OF THE EYEBALL. By L. Webster Fox, M. D., Professor of Ophthalmology, Medico-Chirurgical College, Philadelphia, Pa. Reprinted from the Codex Medicus Philadelphiae, November, 1894.

HYGIENE OF THE EYE. By L. Webster Fox, M. D.

Notes by the Wayside.

BY ERNEST B. SANGREE, A. M., M. D., PHILADELPHIA.

In times past it has been commonly believed that the studious man was marked by two important characteristics: Burning a peculiar quality of illuminant, known as the midnight oil, and stooped shoulders. Personally, I think the middle of the night, after a hard day's work, is the very worst time to study. The brain is tired and refuses to do its best, just as do tired muscles. One hour in the morning is as good for me as four hours plodding at night. There are a few who can drive their brains at night to satisfactory work, but the majority, I think, are alike in this respect.

My advice to medical students, then, is to attempt very little studying late at night. It is usually wasted time, and had much better be employed in sound refreshing sleep. At the classical institution I attended I had a roommate who, firm in the belief that midnight oil was the only kind to study by, would sit for several hours in the middle of the night with a pipe in his mouth and fixedly gazing at his book, three parts asleep and one awake, until he would finally close his book and come to bed, ignorant probably of every sentence he had read, but certain that he had been studying. From lack of proper sleep his intellect was dull the next morning, and the poor fellow figured prominently at the foot of his class all the way through his course.

Neither are 'stooped shoulders any longer a proper sign of great learning; athletics has destroyed that old-time characteristic. *Mens sana in sano corpore* is generally now the motto. As for myself, though not pretending to any phenomenal erudition, I found some time ago that I was growing shockingly stoop-shouldered. The reason I walked that way was because it was an exertion to keep erect. Knowing, however, that this was not only an ungraceful attitude, but very unhygienic as well, I joined a gymnasium and had the examiner go over me. He very soon proved to my satisfaction that the secret of the trouble lay in the unequal development of the back muscles as compared with those of the chest. Most of

the daily muscular exertion of those who are not ordinary laboring men relates mainly to the anterior body, and especially the chest muscles.

The result is that finally the back muscles fail to counterbalance those of the chest, and that one either becomes stoop-shouldered or finds considerable exertion in attempting to keep erect.

If in trying to remedy this matter himself the ordinary man takes up exercising without knowing the exact cause of the trouble, the probability is that three movements out of four will tend still further to develop these anterior muscles, and increase rather than cure the defect.

The examiner, however, to whom I referred, put me on some simple movements, tending to put in action the back muscles. I let the chest muscles severely alone, and in a short time I found that I could walk erect without any of that sense of exertion that was experienced before.

BACILLI IN STREET CARS.

Experiments recently made by Dr. Ezra Wilson, bacteriologist of the Brooklyn Health Department, demonstrates the presence of bacilli in the dust and sweepings of street cars in that city. He has reported a fatal case of tuberculosis in a guinea-pig which had been inoculated with bacilli cultivated from dried sputum found in the cars. Health Commissioner Emory has decided, as a means of disinfecting the stations and cars of that city, that they shall be thoroughly cleansed every three days with a solution of bichloride of mercury. A sub-committee on the prevention of tuberculosis, of the Medical Society of the County of Kings, recently recommended that a city ordinance be passed making it a misdemeanor to expectorate in any public conveyance, but the suggestion was not carried out.

—New York Med. Journal.

CIRCUMCISION FOR INCONTINENCE OF URINE.

A boy 10 years of age had a precipitate way of passing his urine; had a great deal of trouble at school on that count, as he had to run out all at once. I found his trouble was due to a tight prepuce, and he was at once relieved by circumcision.

—Doctor C. W. Shaw in Pittsburg Medical Review.